



# Allium Z

Formulation that reduces oxidative stress, detoxifies and keeps you healthy

Oxidative stress (OS) has been implicated in the development of conditions and diseases such as inflammation, weight gain, diabetes, cancer, arthritis, cardiovascular disease, and neurological diseases such as Alzheimer's and Parkinson's. It can cause damage to cells and subsequent cell death because the reactive oxygen species (ROS) oxidize vital cellular components like lipids, proteins, and DNA. Antioxidant defence mechanisms exist within the body, but these mechanisms are not always completely effective, and, since exposure to damaging environmental factors that can cause OS is ever increasing, exogenous antioxidants could be extremely effective in diminishing its detrimental effects.

**Allium Z** is a nutrient based formulation for scavenging free radicals or ROS in order to reduce the effects of OS in our body. N-Acetylcysteine (NAC), a natural derivative of the essential amino acid cysteine, is one of the major ingredients of Allium Z. NAC is thought to help the body maintain healthy homocysteine levels, which is important for heart health. The active ingredients in Allium Z primarily boost the formation of the potent thiol-based antioxidant and detoxifier, glutathione. Unlike other non-thiol based antioxidants, glutathione provides protection against modern diseases such as obesity, diabetes, cardiovascular disease and Alzheimer's. Glutathione is only located in the aqueous regions of cells, but the propyl mercaptan from onion oil penetrates all cell regions (including membranes) and also the extracellular environment, thereby providing antioxidant protection similar to that of glutathione throughout the body. The combination of onion oil and NAC are administered in the form of S-propylmercapto-N-acetylcysteine (SPMNAC), a patent-pending form of odorless and low toxicity onion supplement. SPMNAC provides thiol based antioxidants in both the aqueous and non-aqueous regions of cells, and helps boost the effectiveness of network antioxidants like vitamin C and vitamin E by recycling them after they have become oxidized. In addition to antioxidant protection, Allium Z protects against other reactive toxins, including those naturally present in the body. The Mitochondria naturally produce low levels of the oxidant, superoxide. These superoxides can cause the formation of aldehydes that can damage proteins and DNA by forming adducts and protein aggregates such as aggregated beta amyloid (implicated in Alzheimer's disease) and aggregated alpha synuclein (implicated in Parkinson's disease). Allium Z is effective in scavenging aldehydes, both within the cell membranes (where they are formed) and within the rest of the body (within the cytosol, nucleus, and even between cells). Allium Z also scavenges the aldehyde form of glucose which can damage proteins (glycation) such as HbA1C. The detoxification properties of Allium Z distinguish it from other antioxidants, and are perhaps the most important reason for its use.

**Active ingredients:** N-acetyl cysteine, onion oil & anhydrous salt of magnesium.

**Inactive ingredients:** Rice protein

**Benefits:**

- Powerful free radical scavenger and unique thiol-based detoxifier.
- Helps boost other natural antioxidants, especially glutathione.
- Reduces the effects of aging from day to day stress.

**Product & Usage Information:**

- **Daily Use:** As a dietary supplement, take 1 to 2 tablets daily, or as advised by your health care practitioner.
- **Shelf Life:** 3 years
- **Storage:** Close tightly after each use. STORE IN A COOL, DRY PLACE. KEEP OUT OF REACH OF CHILDREN.
- **Precautions:** Pregnant or lactating women, hypoglycemics, and people with known medical conditions and/or taking drugs should consult with a physician prior to taking dietary supplements.
- **Drug Interactions:** None known

**SPMNAC for the protection against neurodegenerative diseases**

S-propylmercapto-N-acetylcysteine (SPMNAC) and related organosulfur compounds, when administered in therapeutic doses, may provide protection from various neurodegenerative diseases like Parkinson's disease, Alzheimer's disease, senile dementia, multiple sclerosis etc.

Neurodegenerative diseases like Alzheimer's and Parkinson's are partly attributable to brain inflammation. More specifically, a class of lipophilic mercaptans has the potential to decrease the formation of protein-aldehyde adducts, protein carbonylation, protein aggregation, and the resulting neuro-inflammation which results in the neurological diseases. The process of neurodegeneration is not well understood so the diseases that stem from it have, as yet, no proven preventions or cures. In the search for effective treatments, investigators have come to comprehend the potential of anti-inflammatory agents to delay and slow disease progression. SPMNAC breaks the feedback loop of inflammation preventing unnecessary inflammation.

It is important to note that among antioxidants, only mercaptans (or other thiols) can detoxify aldehydes or repair adducted proteins. Thus the novel supplement SPMNAC is ideal to release lipophilic mercaptans in the body via thiol-disulfide exchange reactions. In fact, other types of antioxidants do not protect proteins from aldehydes and on the contrary can make things worse.

The mixed disulfide (SPMNAC) has much lower objectionable smell and taste than the lipophilic mercaptan itself, so it is preferable for administration as a dietary supplement or in a nutraceutical food. SPMNAC is naturally formed from onion oil and N-acetylcysteine, which are already FDA approved for use in food. SPMNAC naturally produces propyl mercaptan in the body, which is a lipophilic compound already approved by the FDA for use in food.

SPMNAC supplementation (in the form of capsules), is therefore expected to significantly reduce the development and progression of Parkinson's, Alzheimer's and other inflammatory neurodegenerative diseases. This is an ideal and novel supplement that can reduce the suffering of millions of patients from these debilitating diseases

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**Product manufactured** under license from Allium Vitalis, Berkeley, CA, USA.

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**Pending patents:** US 13/373878, US 13/694447, EPO 04820896.1, BD 188/2006